

## Comrie Parish Church Refurbishment Project

### Introduction

Built in 1879, Comrie Parish Church is a traditional, stone Victorian building, which had no insulation and single glazed windows. Because the congregation wanted to change to the 'church without walls' concept, which envisages the building being used much more frequently by the wider community, they decided to undertake a major renovation programme. This involved removing the pews and the existing oil-filled electric heaters underneath them, and replacing them with underfloor heating, and flexible, removable seating. This means the church can be used for a wide range of social and sporting activities. The church members decided that any new heating system was to be affordable, efficient and as ecologically responsible as possible, supported by adequate insulation, secondary glazing and low energy lighting.



### Equipment: 72 kW ÖkoFEN tandem biomass boiler system



An example of an ÖkoFEN tandem system

The congregation wanted the new heating system to be as environmentally sound as possible, and had originally considered using a ground source heat pump (GSHP). A heat loss survey was commissioned by Community Energy Scotland to recommend the best renewable heating solution for this project. Technical concerns over the suitability of a heatpump for the building meant this option was rejected, with a wood pellet boiler being the most logical choice. It was also found that this could be located in an existing cellar, in addition to this there was also a lined chimney flue previously used for an oil boiler. This was re-lined and used for the new pellet boiler system. This means there are no new external visual impacts on the B-listed building.

- 72 kW ÖkoFEN tandem biomass boiler system and controller with 6 tonne pellet storage, flue, DHW cylinder and 1000L buffer tank, all installed in existing boiler house
- Underfloor heating system, including manifolds, programmable room stat, insulation between joists fixed and tails to boiler house, radiator circuit, including radiators x 8, valves and pipe work to boiler area
- Roof and floor insulation

### Tendering and selection

- Tenders were advertised on the Community Energy Scotland website, and three companies responded;
- Two conducted site visits; a third did not;
- Although one of the quotes was cheaper by around £12k, it did not size the boiler to be large enough to meet the calculated heat demand of the building, nor give any spare capacity for the potential future.
- Another quote was more expensive by £45k, so Perthshire Biofuels were selected as the best value installer.

### Cost and Grant Funding

Total Project cost	£108,747	The remaining funding was obtained through: Own Funds £38,061.76
CARES grant	£70,686	
CARES grant Percentage	65%	

### Fuel Bill Savings

No available information as yet.

### Emission Savings

Estimated kWh savings p.a.	164,000
Annual Co2 savings (kg)	65,220
Lifetime Co2 savings (tonnes)	1300

### Local Impact

There has been a lot of interest in this Project. The Church ran educational sessions for the Primary School and Comrie Development Trust, plus a number of private householders and Church Property committees.

### Lessons Learned **Charles Sim, Property Convenor said:**

**The system was only commissioned in mid April [2011]. However, there was an incorrect or faulty thermostat and programmer causing the heating to run constantly and at a very high temperature and this took 5 weeks to diagnose and correct. We turned the system off in June as there were high ambient temperatures.**

For further information, contact:

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